

Zh.S. Utegenova¹, V.I. Suslov²

¹*L.N.Gumilyov Eurasian National University, Astana, Kazakhstan;*

²*Institute of Economics and Industrial Engineering, Novosibirsk, Russia
(E-mail: juldyz_kokshe@mail.ru)*

Foreign experience of innovative capacity management

The development of science and high efficiency of R&D carried out in conjunction with a number of other factors, economic and political nature led to the unprecedented development of the productive forces in the developed countries of the world. The growing role of innovation places new demands on the choice of the most effective mechanisms for the use and evaluation of innovative capacity, management of innovative activity of the enterprise. In order to adequately assess the current situation and the choice of perspective directions of innovative development of the enterprise is necessary to conduct a systematic evaluation of the available innovative capacity. So the innovative development is a major factor in improving the competitiveness of the national economy. In turn, the purpose of innovation development - achieving a quality of economic development based on improving the competitiveness of the national economy. In the article the approaches to the definition of the enterprise innovational capacity are given, also it presents the global innovation index for five years.

Keywords: innovation, innovation policy, innovative process, innovative capacity, innovative activity, innovation financing, knowledge economy, R&D, innovational projects.

In the current period of globalization to survive in the competition, you must create a competitive economy through modernization and diversification, that is, orientation to the innovative way - the most important task to every country. So the innovative development is a major factor in improving the competitiveness of the national economy. In turn, the purpose of innovation development - achieving a quality of economic development based on improving the competitiveness of the national economy.

The current stage of development, as the world, as well as Kazakhstan's economy is characterized by the increasing role of innovation. Development and introduction of innovation in the company's production activities determines its effective competitive development within the industry and in the world economy. This raises the importance of the need to study the major issues of the future of innovation factors in order to improve the competitiveness of the national economy.

Achievement of these goals is possible only if the implementation of innovation policy at the state level is proper, by stimulating innovation processes that underlie the formation of an innovative economy.

The basis of the innovation economy is the innovation capacity.

In the developed and some developing countries, the innovative capacity plays a key role in the innovative development of the economy as a whole is regarded as a source of economic development and is an essential component of national wealth. Problems of formation, operation and use of innovative potential are relevant for Kazakhstan, as the underestimation of the innovation potential and its lack of use, hinder the implementation of the country designated by the Government of a strategy formation of the national innovation system and impede the development of a competitive, socially oriented market economy [1].

The innovative capacity of the organization is a set of enterprise features that determine a company's ability to carry out activities for the establishment and practical application of innovation [2].

The elements of the innovational capacity of the company include:

- Material and technical resources;
- Financial resources;
- Organizational resources;
- Human resources;
- Socio-psychological resources.

For the innovation processes the company must have:

- available funds sufficient to finance development;
- The appropriate material and technical basis for the creation and mass production of the new product;
- staff able to generate creative solutions [2].

Intellectual resources of companies make it possible to generate original ideas underlying any of the innovation process. The level of the intellectual potential of the organization determines the capacity of the «portfolio of innovative ideas».

The concept of «innovation potential» is interconnected with the concept of «innovation activity». Innovative activity means the intensity of innovation in the enterprise.

Innovative firms activity depends not only on the availability of resources. In many respects it determines the organizational culture, which includes the principles and commitments on the basis of which developed and implemented the company's development strategy. Organizational culture reflects the characteristics of the enterprise management system, which must be adapted for innovation [3].

The main factor that reflects the company's innovative activity and influence on the intensity of innovation processes in the enterprise is the susceptibility of the management of innovation. Innovation leadership is the willingness to implement changes in the economic mechanism of the enterprise, risk tolerance. Because of the uncertainty, always accompanying innovation, the manager must be prepared to suffer losses and be able to minimize them [4].

The susceptibility of the organization to innovate depends on the scale of the company. It decreases with the increase of the enterprise, the complexity of the organizational management structure. Small businesses are better able to implement innovative activities due to their greater flexibility and mobility, allowing you to quickly respond to market changes to correct innovative purposes.

The following indicators can be used to assess the company's innovative potential:

- Scientific and technical potential (the number of employees with a degree, the number of rational suggestions per employee, number of patents, etc.);
- commercialization indicators (share of new products in the total volume of production, the number of license agreements, etc.);
- The duration of work performed (the value of the innovation lag);
- Characteristics of innovation management system (forms of stimulation of innovative activity at the enterprise, participated in the implementation of innovative projects management, the level of freedom given to participants of innovative activity) [3].

Today the most large number of innovations is created and implemented in Europe, even despite an economic crisis in this region the highest level of innovations in the world. This results from the fact that the innovative system of the European countries means active participation of private companies in attraction and financing of innovative activity, and also strong support of the state in development and deployment of innovations. In the European countries a large number of innovations is developed on the basis of the state and private enterprises, and not just on the basis of Higher Education Institutions. In recent years an increasing number of the countries and cities separately begin to develop actively innovative activity, to put a large number of investments into development of the new technologies promoting technical and economic progress. Public policy of the majority of developed countries is directed to creation of a powerful innovative ecosystem, at the same time developing states also try not to lag behind in innovative development of the economy, and use the various efforts for increase in innovative activity of the regions. For assessment of innovative capacity of the countries of the world community the set of scientific institutions conducts various researches in the field of innovative activity, development and management of innovations, development of innovative infrastructure, introduction and practical application of innovations and many other. These researches are directed to definition of strengths of the leading countries in innovative development. There is a big set of various researches and ratings in the field of innovative activity of the countries of the world community, however, the Global index of innovations remains the main research enjoying the greatest popularity and the authority. The global index of innovations is created by INSEAD, one of the leading world business schools and business management. The report «Global Innovative Index» (GII) of 2016 is the ninth and is published in common by Cornell University, business school of INSEAD and World Intellectual Property Organization (VOIS – specialized institution of the United Nations system) [5].

GII which is published annually since 2007 serves as the main reference point now for the management of the companies, directive bodies and other persons interested to gain an impression about the innovative processes proceeding in the world. Developers of policy, leaders of business and other interested parties use GII for progress assessment on a constant basis. In preparation of a research this year the following partners took part in field of knowledge: «A.T. Kearney» and «IMProve – the European academy of management of innovations», Confederation of the Indian industry, the du company, and also the Advisory board of the international experts [5].

The basis of the report of GII is made by the rating of the countries of the world on the potential of innovative activity and its results. GII includes indicators which are beyond traditional indicators of innovative activity, such as research and development level that serves as recognition of that important role which is

played by innovations as driving force of economic growth and prosperity, and also reflects need of formation of broad horizontal vision of innovative processes for developed countries and the countries with emerging market.

For assistance to discussion of questions of innovations at the international level, developments of measures of policy and identification of the advanced practice are necessary the indicators allowing to estimate the level of innovative activity and efficiency of policy in this area. The Global Innovative Index (GII) allows to carry out assessment of the factors influencing innovative activity on a constant basis; in particular, it has the following characteristics:

– reviews on 128 countries, including data, the place in rating, strong and the weaknesses calculated on the basis of 82 indicators;

– 82 tables with the data on indicators received from more than 30 international state and private sources including 58 tables with actual data, 19 tables with complex indicators and 5 tables with results of polls;

– the transparent and reproduced technique of calculations at a 90 percent confidential interval for ratings on each index (GII, subindexes of expenses and results), and also the analysis of the factors influencing annual changes of ratings.

The GII rating of 2016 represents an average of two subindexes. The subindex of innovative expenses allows to estimate elements of national economy in which innovative processes, in breakdown on five primary groups proceed: (1) institutes; (2) human capital and researches; (3) infrastructure; (4) level of development of the market and (5) level of development of business. The subindex of innovative results reflects the actual results of such efforts in breakdown on two primary groups: (6) results in field of knowledge and technologies and (7) results of creative activity [6].

By results of a research the rating of the countries of the world on an index of innovations is formed. According to the Global index of innovations of 2016 of [2] 8 of 10 first innovative countries are in Europe, and also 16 European countries enter in top-25 the best innovative countries of the world (Table).

Table

The list of the leading 25 countries according to the report «Global innovative index 2016»

№	Name of the country	The place in rating				
		2012 y.	2013 y.	2014 y.	2015 y.	2016 y.
1	2	3	4	5	6	7
1	Switzerland	1	1	1	1	1
2	Sweden	2	2	3	3	2
3	United Kingdom	5	3	2	2	3
4	United States of America	10	5	6	5	4
5	Finland	4	6	4	6	5
6	Singapore	3	8	7	7	6
7	Ireland	9	10	11	8	7
8	Denmark	7	9	8	10	8
9	Netherlands	6	4	5	4	9
10	Germany	15	15	13	12	10
11	Republic of Korea	21	18	16	14	11
12	Luxembourg	11	12	9	9	12
13	Iceland	18	13	19	13	13
14	Hong Kong (China)	8	7	10	11	14
15	Canada	12	11	12	16	15
16	Japan	25	22	21	19	16
17	New Zealand	13	17	18	15	17
18	France	24	20	22	21	18
19	Australia	23	19	17	17	19
20	Austria	22	23	20	18	20
21	Israel	17	14	15	22	21

Table continuation

1	2	3	4	5	6	7
22	Norway	14	16	14	20	22
23	Belgium	20	21	23	25	23
24	Estonia	19	25	24	23	24
25	China	34	35	29	29	25

Note. Created by author on a basis of link: <http://www.globalinnovationindex.org>.

Among leaders of GII of 2016 four countries are Japan, the USA, the United Kingdom and Germany – are allocated in respect of «quality of innovations», the important indicator reflecting the level of development of the higher education, number of scientific publications and the number of the submitted international applications for patents. China moved to the 17th place on quality of innovations, having become on given by an indicator leader among the countries with the average level of the income; further it is followed by India which outstripped Brazil.

The importance for overcoming an innovative gap is played by investments into innovations. Though institutes form an important basis, the countries have to concentrate efforts on reforming of education and accumulation of own research potential successfully to compete in the conditions of quickly changing global economy.

Innovations demand continuous investments. Before crisis of 2009 expenses on scientific research and developmental developments (Research and development) grew approximately for 7% a year. The data published in GII of 2016 show that in 2014 expenses on research and development around the world grew only by 4%. It became result of delay of economic growth in the countries with emerging market and cuts in expenditure on research and development in the countries with high income level that still causes concern [5]. According to the CEO of VOIS Francis Harry, investment into innovations are an important condition of increase in rates of long-term economic growth. In the existing economic conditions mobilization of new sources of growth and use of the opportunities opened by global innovations of investment into innovations become a priority for all interested parties [6].

From the moment of a release of the first report of INSEAD of the country in rating are constantly interchanged the position, however the last 5 years are steadily included into top ten 9 countries: Switzerland, Great Britain, Sweden, Finland, Netherlands, USA, Singapore, Denmark, Hong Kong (China). It is connected first of all with the fact that, having strong support from public authorities, the enterprises are interested in introduction of innovative technologies in production and realization of the activity.

In Switzerland, for example, it is considered that innovations are the main way to progressive development of national economy. In this regard in Switzerland development of science, creating favorable conditions for new types of business, a conclusion of innovative developments, both on internal, and to the world market is actively kept, and a large number of investment into development of research and development also invests. Therefore for the last years Switzerland remains the leader among the countries in development of innovations. In the majority the European, leading on the level of innovative development countries, very favorable conditions for innovative activity are created, in particular subsidies to private companies for carrying out researches and creation of new developments are allocated, a large number of investments is allocated for development of innovative activity of Higher Education Institutions, the system of the taxation and state regulation improves, and domestic and foreign market of sale of innovative products also develops.

At the same time in the majority of the European countries a large number of investments is allocated for development of the human capital and improvement of an innovational infrastructure that in total gives positive dynamics in development of innovative activity of the enterprises. Almost the state gives big support in development of education in the field of innovative developments and researches in all European countries. The qualified personnel with high education levels and a big package of knowledge in the field of innovation takes part in Switzerland, Great Britain, Sweden, Finland, the Netherlands, Denmark and some other countries in innovative activity.

The report of INSEAD of last year carries the name «Human Factor in Innovative Process», in it special attention is paid to a human factor as to the main developer of innovations [7]. 143 countries with use of 81 indicators which are grouped in seven macrocategories are analyzed: institutes, human capital and researches, infrastructure, development of domestic market, business development, development of technologies and economic knowledge and results of creative activity. The research is conducted for the purpose of assessment of level of innovative potential which the countries can use as the lever of economic and social development.

The first three places in rating, as well as in previous years are occupied by Switzerland, Great Britain and Sweden, Finland, the Netherlands, the USA, Singapore, Denmark, Luxembourg and Hong Kong (regarded separately from the country in general) dalesledut. Ireland left ten of last year, and it was replaced by Luxembourg. The countries which are in the top part of rating are the countries which created the environment favorable for innovations, investments into the human capital and development of new infrastructure. In particular, 25 most innovative countries got very high points in such categories as: infrastructure for information and communication technologies, personnel training, dissemination of knowledge and creative goods and services.

INSEAD also analyzes innovations of quality, measurement of productivity of universities of each country, scientific publications and the international patents: at first between the countries with high income level places are shared by the USA, Japan, Germany and Switzerland follow further. It demonstrates to what and remains to the USA the leader in the field of the higher education and development of scientific activity in Higher Education Institutions. Among the countries with the average level of the income high quality of innovations is observed in China, Brazil and India. However, in the report it is noted that there is a big gap between the countries: among 25 most innovative countries more or less always the same, though with some changes in situation, the rest is difficult to march in step, both for the economic reasons, and because of the difficulties connected by preservation of the human capital necessary for maintenance of innovations.

In the world it is possible to observe active movement of «minds» from the countries which are lagging behind in the leading countries that is connected first of all with the low cost of highly skilled labor. Despite a tendency to decrease in investments into researches and developments on a global scale, new epicenters of innovations grow around the world. Among the countries with the average level of the income in 12 countries significant growth in innovations in 2014, namely in Moldova, Mongolia, Armenia, Ukraine, Georgia, Senegal, Jordan, Malaysia, Vietnam and Thailand, and also, of course, such as India and China is registered. Kenya, Uganda, Mozambique, Rwanda, Malawi, Gambia and Burkina Faso headed rating with the low level of the income [8].

It first of all says that in the certain countries and in the world in general education level increases, the economic situation in the certain countries improves, the qualified personnel has an interest not only in classical approach in the solution of objectives, but also in use of the innovative ideas and new technologies. According to the conclusion of INSEAD, in these countries of an innovation develop by the following four principles: they promote formation and development of new opportunities, promote business cultural development, provide favorable conditions for development of the new companies, and, at last, direct development of infrastructure and the institutes necessary for support of innovative activity to the necessary course. Kazakhstan in rating takes only the 75th place [9].

As always our country concedes to the leaders of the rating in development of institutes, indicators of results of creative activity and especially in development of domestic market. However it is possible to note also strengths of Kazakhstan, such as the qualified labor, development of business and development of knowledge and technologies. From powerful arguments why our country is not able to catch up with leaders in development of innovative activity, it is possible to refer lack of development and improvement of innovative infrastructure. Upon in Kazakhstan comprehensively developed, powerful innovative infrastructure is constructed competitive, to the European measures, but it has almost no practical application concerning introduction at the enterprises of our country but only only serves as the platform for Higher Education Institutions of the country in realization of the scientific activity.

At detailed studying of the Global index of innovations of 2016 it is possible to draw a conclusion that the situation on an innovative pedestal of the world in recent years did not change and most likely will not change and in the near future. At world leaders in the field of innovative activity great opportunities and desire to develop the innovative activity will also introduce various potentially applicable new technologies. The enterprises of the leading countries have strong support of the state concerning financing of developments and introduction of innovations, and strongly developed innovative infrastructure and professional labor promote intensive development of innovative activity of the enterprises. Interest of economically successful countries in development of innovative activity is obvious, they have enough financial resources not only for the stable growth of economy, but also for an exit to the new level of technological development, improvement of an education system, production, realization of knowledge, works, services, and also increase in a level of living of the country.

At the countries with the high level of the income high competitiveness in the field of an innovative research and developments which they also seek to maintain at the constant level by means of increase in level

of innovative activity. However innovative potential also the countries beginners in the field of innovative activity have, innovations are created by people and the labor in all countries is present at enough, a question only in the level and quality of education and stimulation of labor. Now much attention is around the world paid to increase to the level and quality of education.

References

- 1 Kurmanov N. Innovatie activity of small and medium-sized enterprises in Kazakhstan and factors of its development / N.Kurmanov, B.Tolysbayev, D.Aibossynova, N.Parmanov // Economic Annals – XXI, Journal is included into the List of Professional Editions for Economic Branch of Sciences. — Ukraine, Kiev, 2016. — № 158(3-4(2)). — P. 56–60.
- 2 Базилевич А.И. Инновационный менеджмент предприятия / А.И. Базилевич. — М.: ЮНИТИ-ДАНА, 2009. — С. 166.
- 3 Ильенкова С. Инновационный менеджмент: учебник / С.Ильенкова; под ред. С.Д. Ильенковой. — 3-е изд., перераб. и доп. — М.: Юнити-Дана, 2007. — 335 с.
- 4 Mambetova S.Sh. Innovation activity of the company: essence, assessment and increase problems / S.Sh. Mambetova, G.S. Akybayeva // Bulletin of the Karaganda University. Economy series. — 2016. — № 2(82). — P. 125–129.
- 5 Материал из Википедии - свободной энциклопедии. [Электронный ресурс]. — Режим доступа: <https://ru.wikipedia.org/wiki/INSEAD/>.
- 6 Глобальный инновационный индекс 2016 г. Согласно данным электронного ресурса. [Электронный ресурс]. — Режим доступа: http://www.wipo.int/pressroom/ru/articles/2016/article_0008.html.
- 7 The Global Innovation Index 2015. The Human Factor in Innovation. [Электронный ресурс]. — Режим доступа: <http://www.globalinnovationindex.org/content.aspx?page=GII-Home>.
- 8 Толысбаев Б.С. Человеческий потенциал Казахстана в странах ЕАЭС / Б.С. Толысбаев, Т.Б. Утебаев, Н.А. Курманов // Вестн. Караганд. ун-та. Сер. Экономика. — 2016. — № 2(82). — С. 91–98.
- 9 Global Innovation Index 2016 rankings. Согласно данным электронного ресурса. [Электронный ресурс]. — Режим доступа: http://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2016-intro5.pdf.

Ж.С. Утегенова, В.И. Суслов

Инновациялық әлеуетті басқарудың шетелдік тәжірибесі

Ғылымның дамуы мен жүргізілетін ғылыми-зерттеу және тәжірибелік-конструкторлық жұмыстардың жоғары нәтижелілігі экономикалық және саяси тұрғыдағы өзге де факторлармен қоса алғанда алдыңғы қатарлы елдерде өндірістік күштердің қарыштап дамуының алғышартын айқындап берді. Инновациялық қызметтің ұлғайып отырғандығы инновациялық әлеуетті пайдалану мен бағалаудың едәуір тиімді механизмдерін таңдауда, кәсіпорынның инновациялық қызметін басқаруда жаңа талаптар қояда. Қалыптасқан жағдайды толыққанды бағалау және кәсіпорындағы инновациялық дамудың болашағын таңдау үшін ағымдағы инновациялық әлеуетті жүйелі түрде бағалау қажет. Өйткені инновациялық дамудың өзі ұлттық экономиканың бәсекеге қабілеттілігін арттыру негізгі факторы болып табылады. Өз кезегінде инновациялық даму мақсаты — ұлттық экономиканың бәсекеге қабілеттілігін арттыруға негізделген сапалық экономикалық дамуға жету. Мақалада кәсіпорынның инновациялық әлеуетін анықтау зерттелген және бес жыл көлеміндегі жаһандық инновациялық индексі келтірілген.

Кілт сөздер: инновация, инновациялық саясат, инновациялық үдеріс, инновациялық әлеует, инновациялық қызмет, инновацияны қаржыландыру, білім экономикасы, ФЭТКЖ, инновациялық жобалау.

Ж.С. Утегенова, В.И. Суслов

Зарубежный опыт управления инновационным потенциалом

Развитие науки и высокая эффективность проводимых НИОКР в совокупности с рядом других факторов экономического и политического характера обусловили беспрецедентное развитие производительных сил в передовых странах мира. Определено, что возрастающая роль инновационной деятельности предъявляет новые требования к вопросам о выборе наиболее эффективных механизмов использования и оценки инновационного потенциала, управления инновационной деятельностью предприятия. Отмечено, что для адекватной оценки текущей ситуации и выбора перспективных направлений инновационного развития на предприятии необходимо проведение систематической оценки имеющегося инновационного потенциала, потому что само инновационное развитие является главным фактором повышения конкурентоспособности национальной экономики. Подчеркнуто, что,

в свою очередь, цель инновационного развития — достижение качественного экономического развития на основе повышения конкурентоспособности национальной экономики. В статье исследованы подходы к определению инновационного потенциала предприятия, представлены данные глобального инновационного индекса пяти лет.

Ключевые слова: инновация, инновационная политика, инновационный процесс, инновационный потенциал, инновационная деятельность, финансирование инноваций, экономика знаний, НИОКР, инновационные проекты.

References

- 1 Kurmanov, N., Tolysbayev, B., Aibossynova, D. & Parmanov, N. (2016). Innovatie activity of small and medium-sized enterprises in Kazakhstan and factors of its development. *Economic Annals – XXI, Journal is included into the List of Professional Editions for Economic Branch of Sciences*, 158 (3-4(2)), 56–60. Ukraine, Kiev.
- 2 Bazilevich, A.I. (2009). *Innovatsionnyi menedzhment predpriiatiia [Innovative management of the enterprise]*. Moscow: IuNITI-DANA [in Russian].
- 3 Ilyenkova, C. (2007). *Innovatsionnyi menedzhment [Innovative management]*. S.D. I'enkova (Ed.). (3d ed.). Moscow: Iuniti-Dana [in Russian].
- 4 Mambetova, S.Sh. & Akybayeva, G.S. (2016). Innovation activity of the company: essence, assessment and increase problems. *Bulletin of the Karaganda University. Economy series*, 2(82), 125–129.
- 5 Material iz Vikipedii - svobodnoi entsiklopedii [Material from Wikipedia - the free encyclopedia]. *ru.wikipedia.org*. Retrieved from <https://ru.wikipedia.org/wiki/INSEAD/> [in Russian].
- 6 Hlobalnyi innovatsionnyi indeks 2016 h. Sohlasno dannym elektronnoho resursa [Global Innovation Index 2016. According to data of the electronic]. *wipo.int*. Retrieved from http://www.wipo.int/pressroom/ru/articles/2016/artikle_008.html resource
- 7 The Hlobal Innovation Index 2015. The Human Factor in Innovation [The Global Innovation Index 2015. The Human Factor in Innovation]. *globalinnovationind ex.org*. Retrieved from <http://www.globalinnovationind ex.org/content.aspx?page=GII-Home> [in Russian].
- 8 Tolysbayev, B.S., Uteubayev, T.B. & Kurmanov, N.A. Chelovecheskii potentsial Kazakhstana v stranakh EAES [The Human capacity of Kazakhstan and in the countries Eaes]. *Vestnik Karahandinskoho universiteta. Seriya Ekonomika – Bulletin of the Karaganda University. Economy series*, 2(82), 91–98 [in Russian].
- 9 Hlobal Innovation Index 2016 rankings. Sohlasno dannym elektronnoho resursa [Global Innovation Index 2016 rankings. According to data of the electronic]. *wipo.int*. Retrieved from http://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2016-intro5.pdf resource.